

INCH-POUND

MIL-PRF-83532/3B
7 June 2004
SUPERSEDING
MIL-PRF-83532/3A
30 December 1991

PERFORMANCE SPECIFICATION SHEET

DELAY LINES, 14-PIN DIP COMPATIBLE, 10 TAP

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-PRF-83532.

REQUIREMENTS:

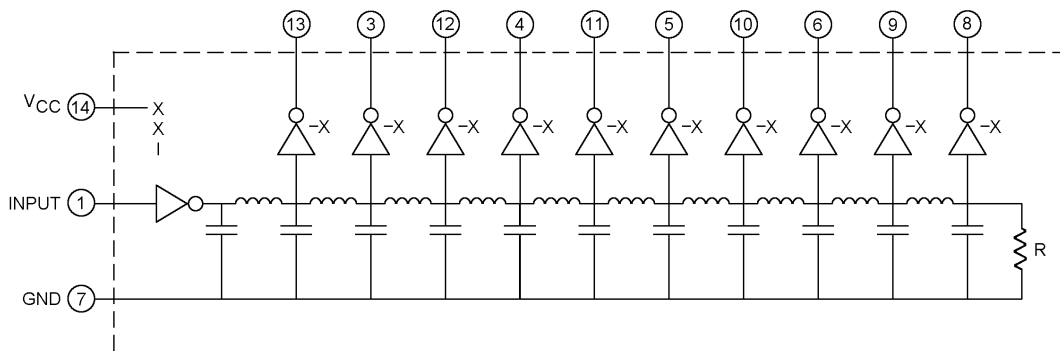
Design and construction: Parts shall be of the design, construction, and physical dimensions specified in the appendix of MIL-PRF-83532. Four case styles (A, B, C, and D) are available.

Input pulse: Delay lines must be capable of meeting applicable table I and table II requirements with an input pulse having the following characteristics:

- A: Leading edge of a positive-going pulse.
- B: Minimum pulse width of 50 percent of total delay time.
- C: Fixed pulse repetition rate equal to ten times the total delay time.
- D: Duty cycle not to exceed 50 percent.

Schematic: See figure 1.

Delay times: Delay time from input to all taps shall be as specified in table I (+25°C) and table II (-55°C and +125°C).



NOTES:

1. Schematic is for general information only.
2. Pin 2 is omitted on level A delay lines.
3. Pin 2 is installed on level B delay lines.

FIGURE 1. Schematic.

TABLE I. Dash numbers and delay characteristics at +25°C, $V_{cc} = 5.00 \pm 0.1$ volts.

Dash number	Delay and tolerances (ns)									
	Tap 1 Pin 13	Tap 2 Pin 3	Tap 3 Pin 12	Tap 4 Pin 4	Tap 5 Pin 11	Tap 6 Pin 5	Tap 7 Pin 10	Tap 8 Pin 6	Tap 9 Pin 9	Tap 10 Pin 8
001	5 \pm 2 ns	10 \pm 2 ns	15 \pm 2 ns	20 \pm 2 ns	25 \pm 2 ns	30 \pm 2 ns	35 \pm 2 ns	40 \pm 2 ns	45 \pm 5%	50 \pm 5%
002	7.5 \pm 2 ns	15 \pm 2 ns	22.5 \pm 2 ns	30 \pm 2 ns	37.5 \pm 2 ns	45 \pm 5%	52.5 \pm 5%	60 \pm 5%	67.5 \pm 5%	75 \pm 5%
003	10 \pm 2 ns	20 \pm 2 ns	30 \pm 2 ns	40 \pm 2 ns	50 \pm 5%	60 \pm 5%	70 \pm 5%	80 \pm 5%	90 \pm 5%	100 \pm 5%
004	12.5 \pm 2 ns	25 \pm 2 ns	37.5 \pm 2 ns	50 \pm 5%	62.5 \pm 5%	75 \pm 5%	87.5 \pm 5%	100 \pm 5%	112.5 \pm 5%	125 \pm 5%
005	15 \pm 2 ns	30 \pm 2 ns	45 \pm 5%	60 \pm 5%	75 \pm 5%	90 \pm 5%	105 \pm 5%	120 \pm 5%	135 \pm 5%	150 \pm 5%
006	17.5 \pm 2 ns	35 \pm 2 ns	52.5 \pm 5%	70 \pm 5%	87.5 \pm 5%	105 \pm 5%	122.5 \pm 5%	140 \pm 5%	157.5 \pm 5%	175 \pm 5%
007	20 \pm 2 ns	40 \pm 2 ns	60 \pm 5%	80 \pm 5%	100 \pm 5%	120 \pm 5%	140 \pm 5%	160 \pm 5%	180 \pm 5%	200 \pm 5%
008	25 \pm 2 ns	50 \pm 5%	75 \pm 5%	100 \pm 5%	125 \pm 5%	150 \pm 5%	175 \pm 5%	200 \pm 5%	225 \pm 5%	250 \pm 5%
009	30 \pm 2 ns	60 \pm 5%	90 \pm 5%	120 \pm 5%	150 \pm 5%	180 \pm 5%	210 \pm 5%	240 \pm 5%	270 \pm 5%	300 \pm 5%
010	35 \pm 2 ns	70 \pm 5%	105 \pm 5%	140 \pm 5%	175 \pm 5%	210 \pm 5%	245 \pm 5%	280 \pm 5%	315 \pm 5%	350 \pm 5%
011	40 \pm 2 ns	80 \pm 5%	120 \pm 5%	160 \pm 5%	200 \pm 5%	240 \pm 5%	280 \pm 5%	320 \pm 5%	360 \pm 5%	400 \pm 5%
012	45 \pm 5%	90 \pm 5%	135 \pm 5%	180 \pm 5%	225 \pm 5%	270 \pm 5%	315 \pm 5%	360 \pm 5%	405 \pm 5%	450 \pm 5%
013	50 \pm 5%	100 \pm 5%	150 \pm 5%	200 \pm 5%	250 \pm 5%	300 \pm 5%	350 \pm 5%	400 \pm 5%	450 \pm 5%	500 \pm 5%
014	60 \pm 5%	120 \pm 5%	180 \pm 5%	240 \pm 5%	300 \pm 5%	360 \pm 5%	420 \pm 5%	480 \pm 5%	540 \pm 5%	600 \pm 5%
015	70 \pm 5%	140 \pm 5%	210 \pm 5%	280 \pm 5%	350 \pm 5%	420 \pm 5%	490 \pm 5%	560 \pm 5%	630 \pm 5%	700 \pm 5%
016	80 \pm 5%	160 \pm 5%	240 \pm 5%	320 \pm 5%	400 \pm 5%	480 \pm 5%	560 \pm 5%	640 \pm 5%	720 \pm 5%	800 \pm 5%
017	90 \pm 5%	180 \pm 5%	270 \pm 5%	360 \pm 5%	450 \pm 5%	540 \pm 5%	630 \pm 5%	720 \pm 5%	810 \pm 5%	900 \pm 5%
018	100 \pm 5%	200 \pm 5%	300 \pm 5%	400 \pm 5%	500 \pm 5%	600 \pm 5%	700 \pm 5%	800 \pm 5%	900 \pm 5%	1000 \pm 5%

TABLE II. Dash numbers and delay characteristics at -55°C and +125°C, $V_{cc} = 5.00 \pm 0.1$ volts.

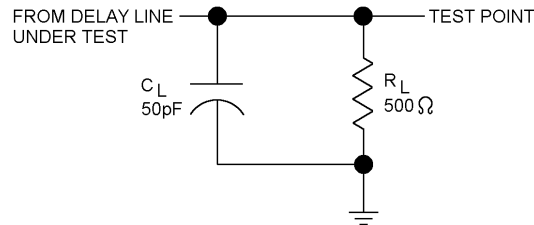
Dash number	Delay and tolerances (ns)									
	Tap 1 Pin 13	Tap 2 Pin 3	Tap 3 Pin 12	Tap 4 Pin 4	Tap 5 Pin 11	Tap 6 Pin 5	Tap 7 Pin 10	Tap 8 Pin 6	Tap 9 Pin 9	Tap 10 Pin 8
001	5 \pm 3 ns	10 \pm 3 ns	15 \pm 3 ns	20 \pm 3 ns	25 \pm 3 ns	30 \pm 3 ns	35 \pm 3 ns	40 \pm 3 ns	45 \pm 8%	50 \pm 8%
002	7.5 \pm 3 ns	15 \pm 3 ns	22.5 \pm 3 ns	30 \pm 3 ns	37.5 \pm 3 ns	45 \pm 8%	52.5 \pm 8%	60 \pm 8%	67.5 \pm 8%	75 \pm 8%
003	10 \pm 3 ns	20 \pm 3 ns	30 \pm 3 ns	40 \pm 3 ns	50 \pm 8%	60 \pm 8%	70 \pm 8%	80 \pm 8%	90 \pm 8%	100 \pm 8%
004	12.5 \pm 3 ns	25 \pm 3 ns	37.5 \pm 3 ns	50 \pm 8%	62.5 \pm 8%	75 \pm 8%	87.5 \pm 8%	100 \pm 8%	112.5 \pm 8%	125 \pm 8%
005	15 \pm 3 ns	30 \pm 3 ns	45 \pm 8%	60 \pm 8%	75 \pm 8%	90 \pm 8%	105 \pm 8%	120 \pm 8%	135 \pm 8%	150 \pm 8%
006	17.5 \pm 3 ns	35 \pm 3 ns	52.5 \pm 8%	70 \pm 8%	87.5 \pm 8%	105 \pm 8%	122.5 \pm 8%	140 \pm 8%	157.5 \pm 8%	175 \pm 8%
007	20 \pm 3 ns	40 \pm 3 ns	60 \pm 8%	80 \pm 8%	100 \pm 8%	120 \pm 8%	140 \pm 8%	160 \pm 8%	180 \pm 8%	200 \pm 8%
008	25 \pm 3 ns	50 \pm 8%	75 \pm 8%	100 \pm 8%	125 \pm 8%	150 \pm 8%	175 \pm 8%	200 \pm 8%	225 \pm 8%	250 \pm 8%
009	30 \pm 3 ns	60 \pm 8%	90 \pm 8%	120 \pm 8%	150 \pm 8%	180 \pm 8%	210 \pm 8%	240 \pm 8%	270 \pm 8%	300 \pm 8%
010	35 \pm 3 ns	70 \pm 8%	105 \pm 8%	140 \pm 8%	175 \pm 8%	210 \pm 8%	245 \pm 8%	280 \pm 8%	315 \pm 8%	350 \pm 8%
011	40 \pm 3 ns	80 \pm 8%	120 \pm 8%	160 \pm 8%	200 \pm 8%	240 \pm 8%	280 \pm 8%	320 \pm 8%	360 \pm 8%	400 \pm 8%
012	45 \pm 8%	90 \pm 8%	135 \pm 8%	180 \pm 8%	225 \pm 8%	270 \pm 8%	315 \pm 8%	360 \pm 8%	405 \pm 8%	450 \pm 8%
013	50 \pm 8%	100 \pm 8%	150 \pm 8%	200 \pm 8%	250 \pm 8%	300 \pm 8%	350 \pm 8%	400 \pm 8%	450 \pm 8%	500 \pm 8%
014	60 \pm 8%	120 \pm 8%	180 \pm 8%	240 \pm 8%	300 \pm 8%	360 \pm 8%	420 \pm 8%	480 \pm 8%	540 \pm 8%	600 \pm 8%
015	70 \pm 8%	140 \pm 8%	210 \pm 8%	280 \pm 8%	350 \pm 8%	420 \pm 8%	490 \pm 8%	560 \pm 8%	630 \pm 8%	700 \pm 8%
016	80 \pm 8%	160 \pm 8%	240 \pm 8%	320 \pm 8%	400 \pm 8%	480 \pm 8%	560 \pm 8%	640 \pm 8%	720 \pm 8%	800 \pm 8%
017	90 \pm 8%	180 \pm 8%	270 \pm 8%	360 \pm 8%	450 \pm 8%	540 \pm 8%	630 \pm 8%	720 \pm 8%	810 \pm 8%	900 \pm 8%
018	100 \pm 8%	200 \pm 8%	300 \pm 8%	400 \pm 8%	500 \pm 8%	600 \pm 8%	700 \pm 8%	800 \pm 8%	900 \pm 8%	1000 \pm 8%

TABLE III. DC characteristics.

Test	Symbol	Conditions -55°C ≤ T _C ≤ +125°C	Limits		Unit
			Min	Max	
High level output voltage	V _{OH}	V _{CC} = 4.5 V V _{IH} = 2.0 V I _{OH} = -1 mA	2.5		V
Low level output voltage	V _{OL}	V _{CC} = 4.5 V V _{IL} = 0.8 V I _{OL} = 20 mA		0.5	V
Input clamp voltage	V _{IC}	V _{CC} = 4.5 V I _I = -18 mA T _C = +25°C		-1.2	V
High level input current	I _{IH1}	V _{CC} = 5.5 V, V _{IH} = 2.7 V		100	μA
	I _{IH2}	V _{CC} = 5.5 V, V _{IH} = 5.5 V		2,000	μA
Low level input current	I _{IL}	V _{CC} = 5.5 V, V _{IL} = 0.5		-4.0	mA
Short circuit output current	I _{OS}	V _{CC} = 5.5 V, V _{OS} = 0.0 V (not more than one output shorted at a time)	-40	-150	mA
Low level supply current	I _{CCL}	V _{CC} = 5.5 V V _I = 0.0 V		130	mA

MIL-PRF-83532/3B

Output rise time (applied to leading edge only): 5 ns maximum for dash numbers 001 through 015, and 6 ns maximum for 016 through 018. Measurement conditions ($-55^{\circ}\text{C} \leq T_C \leq +125^{\circ}\text{C}$): $V_{CC} = 5.0 \text{ V dc}$; $TR_L \leq 3 \text{ ns}$. The load circuit shall be as follows (C_L includes probe and test fixture capacitance):



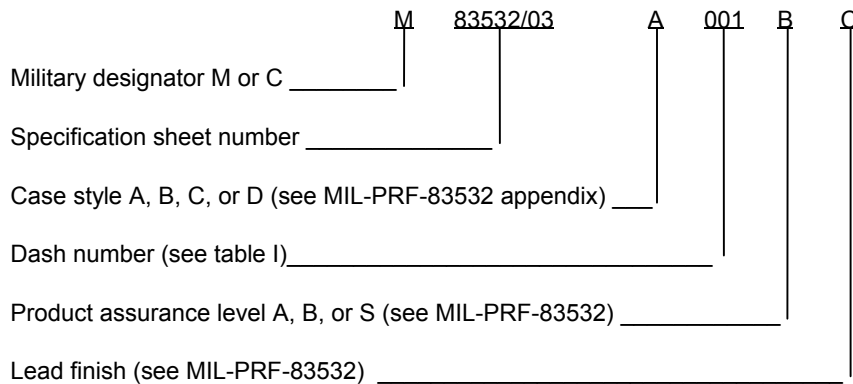
DC parameters (over operating temperature range): See table III.

Rated maximum load (fan-out): Ten TTL Schottky loads per tap (no more than 20 TTL Schottky loads per unit).

Terminations: Part terminations shall be printed-circuit pin type in accordance with MIL-PRF-38534.

Operating temperature: Operating temperature range shall be -55°C to $+125^{\circ}\text{C}$.

Part or Identifying Number (PIN): The PIN shall be in the following format:



VERIFICATION:

Extent of qualification: The extent of qualification shall be as specified in MIL-PRF-83532, for example:

Qualification and testing of M83532/03A001A* 1/ and M83532/03A018A* 1/ shall be sufficient to grant qualification to all dash numbers with case style A contained in this specification sheet. Similarly, for case styles B, C, and D, qualification and testing of dash numbers 001 and 018 shall be sufficient to grant qualification to all dash numbers in this specification sheet having the same case style as the components tested.

1/ * - Asterisk represents any of the applicable finishes.

Product assurance level: Product assurance level A shall not extend to level B. Level B shall not extend to level A.

MIL-PRF-83532/3B

Level S shall extend to level B. Level B shall not extend to level S.

Supersession data: MIL-PRF-83532/3 supersedes DESC drawing number 85014 when a qualified source is available.

Referenced documents. In addition to MIL-PRF-83532, this document references the following:

MIL-PRF-38534 DD 85014

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Custodians:

Army - CR
Navy - EC
Air Force - 11
DLA-CC

Preparing activity:

DLA - CC

(Project 5999-0397)

Review activities:

Navy - AS, CG, MC, SH
Air Force - 19, 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://www.dodssp.daps.mil>.